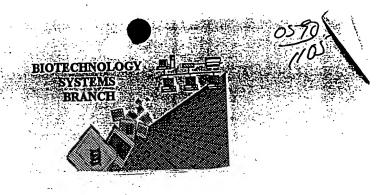


RAW SEQUENCE LISTING ERROR REPORT



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number:	09 940,316
Source:	3910
Date Processed by STIC:	11/20/02

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FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216. PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax) PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

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Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail. Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom. Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

- 1. EFS-Bio (<a href="http://www.uspto.gov/ebc/efs/downloads/documents.htm">http://www.uspto.gov/ebc/efs/downloads/documents.htm</a>, EFS Submission User Manual - ePAVE)
- 2. U.S. Postal Service: U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202
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Revised 01/29/2002





OIPE

Does N. Somply rotte N**eede**u

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/940,316

DATE: 11/20/2002

TIME: 11:24:10

Input Set : D:\30062-20026.txt

Output Set: N:\CRF4\11192002\I940316.raw

3 <110> APPLICANT: KOSAN BIOSCIENCES, Inc. REEVES, CHRISTOPHER CHU, DANIEL 5 KHOSLA, CHAITAN 6 SANTI, DANIEL 7 10 <120> TITLE OF INVENTION: POLYKETIDES ENCODING THE fkbA GENE OF THE FK-520 POLYKETIDE SYNTHASE GENE CLUSTER 13 <130> FILE REFERENCE: 30062-20026.11 15 <140> CURRENT APPLICATION NUMBER: 09/940,316 C--> 16 <141> CURRENT FILING DATE: 2002-11-01 18 <150> PRIOR APPLICATION NUMBER: 09/410,551

19 <151> PRIOR FILING DATE: 1999-10-01

21 <150> PRIOR APPLICATION NUMBER: US 60/139,650

22 <151> PRIOR FILING DATE: 1999-06-17

24 <150> PRIOR APPLICATION NUMBER: US 60/123,810

25 <151> PRIOR FILING DATE: 1999-03-11

27 <150> PRIOR APPLICATION NUMBER: US 60/102,748

28 <151> PRIOR FILING DATE: 1998-10-02

30 <160> NUMBER OF SEQ ID NOS: 72

32 <170> SOFTWARE: FastSEQ for Windows Version 4.0

The type of errors shown exist throughout the Sequence Listing. Please check subsequent sequences for similar errors

tomino numberity:

some digits missily

throughout

## ERRORED SEQUENCES

3245 <210> SEQ ID NO: 17 3246 <211> LENGTH: 1488 3247 <212> TYPE: PRT 3248 <213> ORGANISM: Artificial Sequence 3250 <220> FEATURE: 3251 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic PKS synthase fragment 3254 <400> SEQUENCE: 17 3255 Ile Trp Gln Leu Ala Glu Ala Leu Leu Thr Leu Val Arg Glu Ser Thr . 10 3256 3258 Ala Ala Val Leu Gly His Val Gly Gly Glu Asp Ile Pro Ala Thr Ala 25 20

3261 Ala Phe Lys Asp Leu Gly Ile Asp Ser Leu Thr Ala Val Gln Leu Arg

40 3264 Asn Ala Leu Thr Glu Ala Thr Gly Val Arg Leu Asn Ala Thr Ala Val

55

3267 Phe Asp Phe Pro Thr Pro His Val Leu Ala Gly Lys Leu Gly Asp Glu

75 70 3268 65

Input Set : D:\30062-20026.txt

```
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                                          875
     3418 865
     3420 Thr Val Asp Trp Pro Ala Leu Leu Gly Asp Ala Pro Ala Thr Arg Val
            . 885 890
     3423 Leu Asp Leu Pro Thr Tyr Ala Phe Gln His Gln Arg Tyr Trp Leu Glu
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                                    905
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               915
                                 920
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                             935
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965 970 975

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3439 980 985
 985 990
3441 Val Asp Glu Pro Ala Asp Asp Gly Arg Arg Phe Thr Val His Thr
 3444 Arg Thr Gly Asp Ala Pro Trp Thr Leu His Ala Glu Gly Val Leu Arg
                1015
                                             1020 -
    3445 1010
   3447, Pro His Gly Thr Ala Leu Pro Asp Ala Ala Asp Ala Glu Trp Pro Pro
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                                          1035
     3450 Pro Gly Ala Val Pro Ala Asp Gly Leu Pro Gly Val Trp Arg Arg Gly
                     1045
                                    1050
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     3469 1140
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                             . 1160
                                                1165
              1155
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                            1175 - 1180
   \d\3475 1170
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 E--> 3478 1185 1190
                                          1195
     3480 Val Leu Thr Ala Leu Gln His His Leu Thr Thr Asp His Thr Leu
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             1205
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                                   1225
                  1220
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                                1240
               1235
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```

Input Set : D:\30062-20026.txt

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E>	3493			110	1113		1270		1111	1112		1275		nis	птэ	PIO		,
	3495			Pro	T.e.ii				Thr	Pro				ሞኮኦ	Dro	Tou	128	
	3496		****	110		1285					1290		1,111	1111		1295	ASII.	
	3498		Glu	His									Clu	Thr			C1	
	3499		Olu	1113	1300	116	116	116	1111	1305 1305	GLY	Set	сту	1111	1310	MIG	GIY	
	3501		I.e.ii	ΔΊα	Δra	Wie	Lou	Λορ	uic	1505	шіс	Thr	ти∽	LON		C ~ ~	7.~~	
	3502		пси	1315	ALG	1113	Leu	Mon	1320	FIO	птэ	Lill	TAT	1325		Ser	Arg	
	3504															7 ~~	77-1	
	3505		1330		110	ASP								FIO	Cys	Asp	vai	
	3507				Hie	Gln								Tlo	Dro	Cln	Pro	
E>							1350					1355		116	FIO	GIII	136	
	3510													Asn	Gly	Tlo		
	3511		1111	7114		1365		1111	ALG		1370		Mah	_	_	1375	ьеu	
. •	3513		Ala	Len				Δra	T. 211								Λla	
	3514				1380		мэр	my		1385		Vai	пец		1390	цуз	MIG	
	3516		Ala				T.e.ii	His				Gln	Δen			T.011	Thr	
•	3517			1395					1400		TIIT	OIII		1405	110	пец	1111	
	3519										Δla	Val			Ser	Pro	Glv	
	3520		1410		200	- 7 -		1415		71 <u>+</u> u	1114		1420	Ory	ŲCI	110	Ory .	
	3522				Tvr	Ala				Ala	Phe			Δla	Ĭ. <del>2</del> 11	Δla	Thr	
E>	3523	425	1		- 1 -		430	,				1435	пор	,,, <u>,</u> ,,	шса		144	
	3525	His	Ara	His	Thr	Leu	Glv	Gln	Pro	Ala	Thr		Tle	Δla	Trn	G1 v		
	3526		5		1	L445	011	•			1450	001			112	_	1100	
	3528		His	Thr	Thr	Ser	Thr	Leu	Thr	Glv	Gln	Leu					Ara	
	3529			]	L460					1465			- 1		1470	- 1	9	
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	3933	<21	1> LF	ENGT	l: 15	517												
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	3937																	
								Des	scrip	otior	n of	Arti	fici	lal S	Seque	ence:	Synthet	ic PKS
_	3939			yntha			nent											
	3941																	•
	3942		Leu	Ala	Glu	Ala	Leu	Leu	Thr	Leu	Val	Arg	Glu	Ser	Thr	Ala	Ala	
	3943					5					10					15		
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	3954		Pro	Thr	Pro	His		Leu	Ala	Gly	Lys	Leu	Gly	Asp	Glu	Leu		
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	3958					85					90					95		

Input Set : D:\30062-20026.txt
Output Set: N:\CRF4\11192002\I940316.raw

		_	1	** 3	m1	**- 1	71.	mb	Τ ο ι ι	7~~	7~~	7 en	Asn	Glv	Asp	Δla	Thr
	4107	Asp	Val	Vai		885	Ата	Thr	Leu	Arg	890	АЗР	мэр	СТУ	N3P	895	1111
	4108 4110	7 ~ ~	Mot	Lou	Thr	7 l a	I All	Δla	Gln	Δla		Val	His	Glv	Val	Thr	Val
		Arg	Met	reu	900	Ala	Бец	AIG		905	- 1 -			1	910		
	4111 4113	Λοο	Trn	Pro	200 212	Tla	I.e.ii	Glv			Thr	Thr	Ara	Val	Leu	Asp.	Leu
	4114	Asp	пр	915	AIG.	110	пси	Ory	920					925		٠.	
	4114	Dro	Thr	Tur	Δla	Phe	Gln						Leu	Glu	Ser	Ala	Arg
	4117	FIO	930	ı yı	1114	1110	O-11	935	02		- 1	٠.	940				
•	4119	Pro	Ala	Ala	Ser	Asp	Ala	Glv	His	Pro	Val	Leu	Gly	Ser	Gly	Ile	Ala
	4120	945					950					955					960
	4122	Leu	Ala	Glv	Ser	Pro	Glv	Arq	Val	Phe	Thr	Gly	Ser	Val	Pro	Thr	Gly
	4123					965	•	٠			970				•	913	
	4125	Ala	Asp	Arq	Ala	Val	Phe	Val	Ala	Glu	Leu	Ala	Leu	Ala	Ala	Ala	Asp
	4126				980					·98·5			·		990		
	4128	Ala	Val	Asp	Cys	Ala	Thr	Val	Glu	Arg	Leu	Asp	Ile	Ala	Ser	Val	Pro
	4129			995					1000					1005			
	4131	Gly	Arġ	Pro	Gly	His	Gly	Arg	Thr	Thr	Val	Gln	Thr	Trp	Val	Asp	Glu
	4132	-	1010					1015					1020				
	4134	Pro	Ala	Asp	Asp	Gly	Arg	Arg	Arg	Phe	Thr	Val	His	Thr	Arg	Thr	GIY
E>	4135	025					1030					1035				-	1040
	4137	Asp	Ala	Pro	Trp	Thr	Leu	His	Ala	Glu	Gly	Val	Leu	Arg	Pro	105	= GTÀ
	4138					1045					1050	m	D	Desc	Dwo		
	4140	Thr	Ala			Asp	Ala	Ala	Asp	Ala	GIu	Trp	Pro	Pro	1070	GTÅ	Ala
	4141	_			1060		_	_	G1	1065	m	7. ~ ~	7 ~~			Gln	Val
	4143	Val			Asp	Gly	Leu	Pro	GLY	vaı	Trp	Arg	Arg	1085	Азр	GIII	Val
	4144			1075		61.	**- 1	7	1080		Λco				Val	His	Pro
	4146				Ala	GIU		ASP 1095		PIO.	Asp	Gry	1100	Val	• • • •		
	4147 4149	7	1090	T 0	7 00	הוה	Val	DP 0						Glv	Ser	Ara	Gln
				ьeu	ASP		۷aı 1 <b>110</b>		261	MIG	• • • •	1115	1.02	<u>1</u>			1120
E>	<b>4150</b> 4152	102	רות	Clv	Ψrn	Δrα	TIIO	I.e.11	Thr	Val			Ser	Asp	Ala	Thr	Val
	4152		Ala	Gry		1125		пси			1130					113	5
	4155	T.eu	Ara	Ala	Cvs	Leu	Thr	Ara	Ara				Ala	Met	Gly	Phe	Ala
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	4167	Leu	Pro	Glu	Gly	His	Val	Leu	Ile	Thr	Ala	Ala	His	Pro	Asp	ASP	Pro
	4168					1205			-		1210		m1	70		121	
			Asp				Arg	Ala	His	Thr	Arg	Ala	Thr	Arg	1220	Leu	Thr
	4171				1220		_	<b>~</b> `	æ.	1225	70	11: -	ጥኤ		1230		Hic
						His	Leu	Thr	Thr	Thr	Asp	nlS	1111	1245	. 116	val	His
	4174			1235		-	n 1	C 1	1240	! . ጥኤ	. 17-7	Th ~	C1.			Ara	Thr
	4176	Thr	Thr	Thr	Asp	Pro	Ala	GLY	, нта	ınr	val	1111	1260	леп		1119	Thr
	4177		1250	70 -	<b>C</b> 1	11: -	D	1255		, Tl-	Dro	יום. די			Thr	Asn	His
	4179	Ala	Gln	ı Asn	GLu	Hls	Pro	) HlS	Arg	і тте	HIG	T-C		. 010			His

DATE: 11/20/2002 RAW SEQUENCE LISTING PATENT APPLICATION: US/09/940,316 TIME: 11:24:10

Input Set : D:\30062-20026.txt
Output Set: N:\CRF4\11192002\1940316.raw

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ピーーン	4100	265 1270 1275 1280 Pro His Thr Pro Leu Pro Leu Ala Gln Leu Ala Thr Leu Asp His Pro
	4183	1285 1290 1295
		His Leu Arg Leu Thr His His Thr Leu His His Pro His Leu Thr Pro
	4186	1300 1305 - 1310
		Leu His Thr Thr Pro Pro Thr Thr Pro Leu Asn Pro Glu His
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	4192	Arg His Leu Asn His Pro His Thr Tyr Leu Leu Ser Arg Thr Pro Pro
	4194	345 1350 1355 1360
E>	4195	
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	4198	
		His Gln Leu Ala Thr Thr Leu Thr His Ile Pro Gln Pro Leu Thr Ala 1380 1385 1390
•	4201	1500
		Ile Phe His Thr Ala Ala Thr Leu Asp Asp Gly Ile Leu His Ala Leu 1395 1400 1405
	4204	
٠		Thr Pro Asp Arg Leu Thr Thr Val Leu His Pro Lys Ala Asn Ala Ala
	4207	1410 1415 1420
		Trp His Leu His His Leu Thr Gln Asn Gln Pro Leu Thr His Phe Val
E>	4210	423 1430 2.00
		Leu Tyr Ser Ser Ala Ala Ala Val Leu Gly Ser Pro Gly Gln Gly Asn
•	421.3	1445 1450 1455
		Tyr Ala Ala Asn Ala Phe Leu Asp Ala Leu Ala Thr His Arg His
	4216	1100
	4218	Thr Leu Gly Gln Pro Ala Thr Ser Ile Ala Trp Gly Met Trp His Thr
	4219	1475 1480 1485
		Thr Ser Thr Leu Thr Gly Gln Leu Asp Asp Ala Asp Arg Asp Arg Ile
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	4631	Lys Asp Leu Gly Ile Asp Ser Leu Thr Ala Val Gln Leu Arg Asn Ala
	4632	35 40 45
	4634	Leu Thr Glu Ala Thr Gly Val Arg Leu Asn Ala Thr Ala Val Phe Asp
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	4637	Phe Pro Thr Pro His Val Leu Ala Gly Lys Leu Gly Asp Glu Leu Thr
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Input Set : D:\30062-20026.txt
Output Set: N:\CRF4\11192002\I940316.raw

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	4788	865					870			_	1	875	7	T 0	Dro	mh ~	
	4790	Leu	Leu	Gly	Asp	Ala	Pro	Ala	Thr	Arg	890	ьeu	Asp	Leu	PIO.	895	ıyı
	4791					885	_ · · ·	_	<b>.</b>								בות
	4793	Ala	Phe	GIn						Leu	GIU	ser	Ата	Arg	910	AIG	AIA
	4794		_	- 1	900			**- 1		905	C~~	C1	Tlo	Nla		Δla	Gly
	4796	Ser	Asp		GLY	HlS	Pro	vaı		СТА	Sér	сту	TTE	925	neu	AIG	Gry
	4797			915	_			m\	920	C	17-1	Dro	Thr		Д] э	Asn	Ara
	4799			Gly	Arg	Val	Phe	Thr	GIÀ	Ser	vai	PIO	940	СТУ	Ата	лэр	ALG
	4800	٠.	930					935		· .	7.1-	77.		Λcn.	ЛΙэ	V=1	Acn
	4802				Val	Al·a	Glu	Leu	Ата	ьeu	Ala	955	АТа	пэр	Ата	Val	960
	4803	945				~ 1	950		·	T1_	71.		1753	Dro	C1 v	· Δrα	
	4805	Cys	Ala	Thr	Val		Arg	Leu	Asp	ire	970				Gry	975	110
	4806				_	965			<b>.</b>	M\			7 an		Dro	_	Asn
	4808			Gly		Thr	Thr	vai	GIN	OOE	пр	val.	мэр	Gru	990	ATO	пор
	4809			_	980	_	-	· m\		985	The second	7. ~ ~	Thr	C1 v		Δla	Pro
	4811	Asp	GLy		Arg	Arg	Phe	Inr	vaı	HIS	IIII	Arg	1111	1005	изр	пла	110
	4812			995		_ ,	~ 1	63	1000	T	71	Dwo			Ψhr	∆1 a	T.e.n
	4814			Leu	His	Ala	GIu	GTA	vaı	ьeu	Arg	FIO.	1020	СТУ	1111	nπα	Dea
	4815	_ :	1010					1015		D	Dro			ЛΙэ	V = 1	Pro	Δla
	4817						Ala	GIU			PIO.	L035	СТУ	Ara	٧۵١	110.	1040
E>	4818	025	- 1	_	٠.	61	1030		70	7~~			Gln	V = 1	Phe		
•	4820	Asp	Gly	Leu			vaı	Trp	Arg	Arg	1050	ASP	GIII	Vai		105	5
	4821		~ 1			1045	D	7	C1			W-1	Uic				
	4823	Ala	Glu			GTÀ	Pro	Asp	GTA	1065	vai	Val		110	1070		200
	4824 4826		71.	17-1	1060		71 a	U a l	C1.,	7002	Gly	Sar	Δra	Gln		Ala	Glv
		Asp			Pne	Ser	Ald	vaı.	1000	ASP	GIY		1119	1085			~ <b>,~</b> _1
	4827 4829	m	7	1075	Lou		11-1	uic.	7000							Ara	Ala
			ALG 1090		reu	1111		1095		Jer	risp	1110	1100				
	4830 4832	C	1090	mb~	7\ ~~ ~	7~~	<b>ጥ</b> ኮ ~	7052	Gly	Δla	Met			Ala	Ala	Phe	Asp
	4833 4833		Leu	1111	ALG		1110		Gry	mu	1100	1115					1120
E>	4835	205	715	Clv	Lou				Thr				Val	Thr	Leu	Arq	Glu
•	4836	Gry	Ala	Gry		1125	vaı	цеи	1111	1114	1130					113	5
	4030	1/01	717	Sor	Dro	Sar	Glv	Sar	Glu		Ser	Asp	Glv	Leu	His	Arq	Leu
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F>	4848			Arg	ΛIα		1190				5	1195					1200
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	4857			1235		, , r d	110		1240				- 1	1245			
	4850	Pro	Ι.Δ.1	Pro	ום.]	Δla	Gln	I,e11	Ala	Thr	Leu	Asp	His	Pro	His	Leu	Arg
	マリンブ		11 C U		u	به بده د						-					

Input Set : D:\30062-20026.txt

```
1260
                           1255
    4860
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                                              1420
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     5317 35
     5319 Leu Thr Glu Ala Thr Gly Val Arg Leu Asn Ala Thr Ala Val Phe Asp
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     5322 Phe Pro Thr Pro His Val Leu Ala Gly Lys Leu Gly Asp Glu Leu Thr
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Input Set : D:\30062-20026.txt

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	5479 5481	Thr			900 Arg	Val	Leu	Asp	Leu	905 Pro	Thr	Tyr	Ala			His	Gln
	5482 5484		Tyr		Leu	Glu	Ser	Ala			 Ala			925 Asp	Ala	Gly	His
	5485 5487	Desa	930		C1	Co.~	C1	935	ת 1 ת	Lou	Λla	Glv	940 Sar	Pro	Glv	Ara	Val
	5488	945					950					955					960
٠	5490 5491			Gly		Val 965	Pro		Gly	Ala	Asp 970	Arg	Ala	Val	Phe	975	
	5493	Glü	Leu	Ala	Leu						Val	Asp	Cys	Ala		Val	Glu
-	5494 5496	Arq	Leu	Asp	980 []le	Ala		Val		985 Gly	Arg	Pro	Gly	His	990 Gly	Arg	Thr
•	5497 5499			995			-	. :	1000	-				L005			
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	5506 5508	Ala	Glu		Pro		Pro	Gly		Val	Ρ́ro	Ala	Asp	Gly		Pro	
	5509 5511	Val	Trp	Arg	1060 Arg	Gly	Asp	Gļn	Val	1065 Phe		Glu	Ala	Glu		Asp	Gly
	5512 5514	Pro	-: Asn	1075 Glv	Phe	Val	Val	His	1080 Pro	Asp	Leu	Leu		1085 Ala	Val	Phe	Ser
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	5517		Val	Gly	Asp			Arg	GIn			619 11-15	rp	Arg	ASP	Leu.	1120
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	5523	Thr	Asp		Ala 1140	Met	Gly	Phe		Ala 1145	Phe	Asp	Gly	Ala	Gly 1150	Leu	Pro
	5524 5526	Val	T.e.u	Thr	LI4Ο	Glu	Δla	Val			Ara	Glu	Val			Pro	Ser
	5527			1155	mu	Olu	1110		1160	200	9			1165			
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	5538 5539	Thr	Arg		Thr 1220	Arg	Val	Leu		Ala 1225		Gln	His	His	Leu 1230	Thr	Thr
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	5542 5544	Thr		1235 Thr		Leu	Thr		1240 Thr		Gln	Asn	Glu		Pro	His	Arg
	5545 5547		1250					1255					1260				
	5547	TIG	AT 9	пец	* T &	GIU	1111	, rab		110							



Input Set : D:\30062-20026.txt

			1070		1	275		1280	
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	5551	* - 112 - 112 - F	1285	mb= D=0			Thr Pro		
		Leu His His E			1305	IIIL IIIL	1310	110 1111	
	5554		300			Tlo Tlo		Gly Ser	
		Thr Thr Pro I	Leu Asn Pro	Glu His	Ala lie	TIE IIE	325	GIY Sel	
	5557	1315		1320	Des His			Hie Thr	
		Gly Thr Leu A		ren Ara	Arg HIS	1340	nis rio	1113 1111	
	5560	1330 ·		1335	D 7		Dro Cly	Thr His	
		Tyr Leu Leu S		Pro Pro	Pro Asp	.355	PIO GIY	1360	
E>	5563	345	1350	7 D					
		Leu Pro Cys A	Asp val Gly 1365	Asp Pro	1270	Leu Ala	IIII IIII	1375	
	5566	1 5	1365	mb 71-	T10 Db0	Hic Thr	λιο λιο		
		His Ile Pro	380 Pro Leu	Inr Ala	TIE FIE	HIS IIII	1390	IIII bed	
	5569							Thr Val	•
		Asp Asp Gly	lle Leu His			Asp Arg	.405	IIII Vai	
	5572	1395		1400		_		Thr Gln	
		Leu His Pro I			lib ürz	1420	HIS Ded	THE OTH	
	5575	1410 Asn Gln Pro 1		1415	Tou Tur		Δ12 Δ12	Ala Val	-
					Leu Lyr	1435	AIG AIG	1440	
E>	5578	Leu Gly Ser	1430				Asn Ala		
		_		GIY ASI		AIG AIG	ASII ALL	1455	•
	2281	Asp Ala Leu A	Nia The Uic			Gly Gln	Pro Ala		
		ASP ATA Leu A	460.	AIG NIS	1465	Oly Ol	1470		
	5584	Ile Ala Trp	40U. Clu Mot Tro	Hie Thr	Thr Ser	Thr Len		-	
	5587	110 A10 11D V	Gry Mec 11p	1480	, 1111 001	11	485		
	5500	Asp Asp Ala	Asn Ara Asn	Ard Tle	Ara Ara	Glv Glv		Pro .Ile	
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	6024	35		40			45		
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	6027	50		55		60			• •
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	6185 6186	Pro	Val	Leu	Phe 900	His	Ala	His	Thr	Gln 905		Tyr	Pro	Asp	Ala 910	Val	Phe
	6188 6189	Val	Glu	Ile 915		Pro	Gly	Gln	Asp 920	Leu	Ser	Pro	Leu	Val 925	Asp	Gly	Ile
	6191 6192	Ala	Leu 930	Gln		Gly	Thr	Ala 935	Asp	Glu	Val			Leu	His	Thr	Ala
	6194 6195								Gly	Ala	Thr	Leu 955	Asp		Ser	Arg	Ile 960
	6197 6198	Leu	Gly	Gly	Ala	Ser		His	Asp	Pro	Asp 970	-	Pro	Ser	Tyr	Ala 975	Phe
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E>	6212 6213	Thr	Val	Glu				Val	Thr				Gly	Gly	Ser	Ala 1055	
	6215 6216	Gly	Arg					Thr	Trp	Val		Glu	Pro			Asp	Gly
		_	-			Thr		His		Arg	Val	Gly	Asp				Thr
	6221 6222	Leu			Glu	Gly						Arg				Pro	Glu
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	6236 6237				Val	His			Asp	Ala	Thr	Val		Arg	Ala	Cys	Leu
F>	6239 <b>6240</b>	Thr		Arg	Asp					Ġlu			Ala		Asp	Gly	Ala <b>120</b>
E>	6242 6243	Gly	Met	Pro				Ala	Glu					Gly	Glu	Val 1215	Ala
	6245 6246	Ser	Ala				Asp	Glu				Leu	Leu				Trp
	6248 6249			Val 1235	Ala	Glu	Ala				Gly	Ala		Glu 1245	Leu	Pro	Glu
	6251	Gly			Leu	Ile	Thr			His	Pro	Asp	Asp	Pro	Asp	Asp	Pro

Input Set : D:\30062-20026.txt

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	6258	•
		Ile Val His Thr Thr Asp Pro Pro Gly Ala Ala Val Thr Gly Leu
	6261	
	6263	Thr Arg Thr Ala Gln Asn Glu His Pro Gly Arg Ile His Leu Ile Glu
	6264	1315 1320 1325
	6266	Thr His His Pro His Thr Pro Leu Pro Leu Thr Gln Leu Thr Thr Leu
	6267	1330 1335 1340
	6269	His Gln Pro His Leu Arg Leu Thr Asn Asn Thr Leu His Thr Pro His
E>	6270	345 1350 1355 136
	6272	Leu Thr Pro Ile Thr Thr His His Asn Thr Thr Thr Thr Pro Asn
		1365 1370 1375
	6275	Thr Pro Pro Leu Asn Pro Asn His Ala Ile Leu Ile Thr Gly Gly Ser
	6276	1380 1385 1390
	6278	Gly Thr Leu Ala Gly Ile Leu Ala Arg His Leu Asn His Pro His Thr
•	6279	1395 1400 1405
	6281	Tyr Leu Leu Ser Arg Thr Pro Pro Pro Pro Thr Thr Pro Gly Thr His
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	6284	Ile Pro Cys Asp Leu Thr Asp Pro Thr Gln Ile Thr Gln Ala Leu Thr
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	6287	His Ile Pro Gln Pro Leu Thr Gly Ile Phe His Thr Ala Ala Thr Leu
	6288	
	6290	Asp Asp Ala Thr Leu Thr Asn Leu Thr Pro Gln His Leu Thr Thr Thr
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	6894 6895	865					870					875					880
	6897 6898		_		-	885		*			890					895	
	6900 6901			-	900					905	-				910		
	6903 6904			915					920					925			
	6906. 6907		930	_			-	935					940				
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	6912 6913			_	_	965					970					975	
	6915 6916				980					985				·	990		
	6918 6919			995				. 1	000				1	1005.			
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	6942 6943				1	.125				1	1130				1	1135	
	6945 6946			1	140	_			]	L145				1	150		•
	6948 6949		1	155				1	160				3	165			
	6951	Arg	Arg	Asp	Ser	Gly	Val	Val	GLu	Leu	Ala	А1а	rne	Asp	сту	Ата	GTÀ

DATE: 11/20/2002 RAW SEQUENCE LISTING PATENT APPLICATION: US/09/940,316 TIME: 11:24:11

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E>			FIO	vai	пеп		190	OIU	001		1	195	2				120
ピーーン	6957	712	Clu	C1 v	Sar	Acn	Glu	Ser	Asp	Glv			Ara	Leu	Glu	Trp	Leu
	69581		GIY	<b>дт</b> у	1	205	Q1 u	501	1106	1	210		,		1	215	
	6960	Dwa	W-1	ת 1 ת	C1,,	712	Hie.	Tur	Asn	Glv						Glu	Gly
	6961	PIO	vaı		.220	МІА	1113	1 y 1	110 P	225				1	.230	-	-
	6963	Ф	Th~	TOUL	710	Thr	בות	Thr	His	Pro	Asp	Asp	Pro	Asp	Asp	Pro	Thr
	6964	1.YL		235	116	1111	лια	1 1	240				1	.245	•		
	6966	Nain	Dro	.233 .233	Λcn	Thr	Pro	Thr	Ara	Thr	His	Thr	Gln	Thr	Thr	Arg	Val
	6967	ASII	250	urz	MSII	IIIL	1	255	1119	1111	1120		1260			,	
	6969	. I	.2JU	<b>Λ</b> 1 ¬	LOU	Gln'	Hie	His	Leu	Tle	Thr	Thr	Asn	His	Thr	Leu	Ile
	6970	Den Den	1111	ATO	ьеи	1	270	1110	100		1	L275					128
E>	6972	Z 0 0	uic	Thr	Thr	Thr	Asn	Pro	Pro	Glv	Ala	Ala	Val	Thr	Gly	Leu	Thr
	6973	vaı	птэ	1111	1111	285	изр	LIO	110	, O ± j ]	1290				1	295	
•	6975	7 ~~	Thr	λΙа	Gln	.205 Aen	Glu	His	Pro	Glv	Ara	Ile	His	Leu	Ile	Glu	Thr
	6976	MIG	1111		300					1305	5			:	1310		
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	6979			115	1113	1111	110	БОФ.	1320				. 3	1325			
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,	7005	Gln	Pro			Asp	Ala	Ala	Trp	His	Leu	His	HIS	HIS	1170	GIII	Asn
	7006				1460			_	_	1465	_	ā	. 71-	-; - 71 -	14/0	Th ~	Lou
		Gln	Pro	Leu	Thr	His	Phe	Val	Leu	Tyr	Ser	Ser	Ala	1485	Ата	1111	Leu
	7009			1475				_	1480	<b>33</b> -	7 1 <u>-</u>	7.1.				I All	Asn
					Gly	Gln				Ala	Ата	Ата	1500	міа	. THE	цеи	Asp
	7012		1490			•	_	1495	m)	O1	C1.	. cl-			Thr	Thr	Tle
				Ala	Thr				Thr	GIN	. сту	1515	: FI.O	ALG	. 1111	1111	11e
E>	7015	505				_	1510	m)	m1	mb.s	mh~	1515		Sar	 Gln	۰. ۲.۵۱۱	
			Trp	Gly	Met	Trp	HIS	Thr	ınr	III	1530	ייייייייייייייייייייייייייייייייייייייי	. 1111	261	O 1 1 1	1535	Thr
	7018	_	_		70	1525	7	- T1-	7 ~ ~				, Pho	I.e.			
			Ser				Arg	116	: ALG	1545	, <u>ст</u> у	U 1 3			1550		Ser
	7021		7		1540					1040	•						
				Glu		Mec						•					
	7024			1555													

Input Set : D:\30062-20026.txt

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7442 <210> SEQ ID NO: 29
7443 <211> LENGTH: 1588
7444 <212> TYPE: PRT
7445 <213> ORGANISM: Artificial Sequence
7447 <220> FEATURE:
7448 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic PKS
      synthase fragment
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7456
7458 Arg Arg Thr Thr Val Arg Arg Ala Ala Val Arg Glu Arg Ser Leu Ala
            35.
                                40
7461 Asp Arg Ser Pro Cys Cys Pro Thr Thr Ser Ala Pro Thr Pro Pro Ser
        50
                            55
7464 Arg Ser Ser Trp Asn Ser Thr Ala Thr Val Leu Gly His Leu Gly Ala
                                           75
                        70
7467 Glu Asp Ile Pro Ala Thr Thr Phe Lys Glu Leu Gly Ile Asp Ser
                                       90
                    85
7470 Leu Thr Ala Val Gln Leu Arg Asn Ala Leu Thr Thr Ala Thr Gly Val
                                  105
               100
7473 Arg Leu Asn Ala Thr Ala Val Phe Asp Phe Pro Thr Pro Arg Ala Leu
                                                  125
                               120
      115
7476 Ala Ala Arg Leu Gly Asp Glu Leu Ala Gly Thr Arg Ala Pro Val Ala
                           135 140
7479 Ala Arg Thr Ala Ala Thr Ala Ala Ala His Asp Glu Pro Leu Ala Ile
                        7480 145
7482 Val Gly Met Ala Cys Arg Leu Pro Gly Gly Val Ala Ser Pro Gln Glu
                                       170
7483
                    165
7485 Leu Trp Arg Leu Val Ala Ser Gly Thr Asp Ala Ile Thr Glu Phe Pro
                                   185
               180
7488 Ala Asp Arg Gly Trp Asp Val Asp Ala Leu Tyr Asp Pro Asp Pro Asp
      195
                               200
7491 Ala Ile Gly Lys Thr Phe Val Arg His Gly Gly Phe Leu Asp Gly Ala
                            215
7494 Thr Gly Phe Asp Ala Ala Phe Phe Gly Ile Ser Pro Arg Glu Ala Leu
                                           235
                        230
7495 225
7497 Ala Met Asp Pro Gln Gln Arg Val Leu Leu Glu Thr Ser Trp Glu Ala
                                       250
                    245
7500 Phe Glu Ser Ala Gly Ile Thr Pro Asp Ala Ala Arg Gly Ser Asp Thr
                                   265
                260
7503 Gly Val Phe Ile Gly Ala Phe Ser Tyr Gly Tyr Gly Thr Gly Ala Asp
                                280
            275
7506 Thr Asn Gly Phe Gly Ala Thr Gly Ser Gln Thr Ser Val Leu Ser Gly
                            295
7509 Arg Leu Ser Tyr Phe Tyr Gly Leu Glu Gly Pro Ser Val Thr Val Asp
                                           315
                       310
7512 Thr Ala Cys Ser Ser Ser Leu Val Ala Leu His Gln Ala Gly Gln Ser
```

Input Set : D:\30062-20026.txt

	7587	Val	Asp	Val	Val	Gln	Pro	Ala	Ser	Trp	Ala	Met	Met	Val	Ser	Leu	Ala
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•	7590	Aļa	Val	Trp	Gln	Ala	Ala	Gly	Val	Arg	Pro	Asp	Ala	Val	TTE	GLY	HlS
•	7591				740					745					150		
	7593	Ser	Gln	Gly	Glu	Ile	Ala	Ala	Ala	Cys	Val	Ala	Gly	Ala	vaı	Ser	ren
•	7594	•. •		755	•				760					765	- 1		20
	7596	Arg	Asp	Ala	Ala	Arg	Ile	Val	Thr	Leu	Arg	Ser	Gln	Ala	TTE	Ата	Arg
	7597		770					775					780	_	_	7 J -	C1
	7599	Gly	Leu	Ala	Gly	Arg	Gly	Ala	Met	Ala	Ser	Val	Ala	Leu	Pro	Ата	GIN
	7600	785					790					795				C1	800
	7602	Asp	Val	Glu	Leu	Val	Asp	Gly	Ala	Trp	Ile	Ala	Ala	His	Asn	GIY	Pro
	7603	-				805			-		810			_		815	T
	7605	Ala	Ser	Thr	Val	Ile	Ala	Gly	Thr	Pro	Glu	Ala	Val	Asp	HIS	vaı	Leu
	7606				820					825					830		
	7608	Thr	Ala	His	Glu	Ala	Gln	Gly	Val	Arg	Val	Arg	Arg	11e	Thr	vaı	ASP
	7609			835					840					845			
	7611	Tyr	Ala	Ser	His	Thr	Pro	His	Val	Glu	Leu	lle	Arg	Asp	GIU	Leu	Leu
	7612		850					855	,			_	860	,	ъ.,	m	T a
	7614	Asp	Ile	Thr	Ser	Asp					Thr	Pro	Leu	vaı	Pro	rrp	880
	7615	865					870				_	875	<b>T</b>	7	. (2)	C1	
	7617	Ser	Thr	Val	Asp		Thr	Trp	Val	Asp	Ser	Pro	Leu	Asp	GIA	GIU	ıyı
	7618					885					890		,,,,	D	71 -	895	Cor
	7620	Trp	Tyr	Arg		Leu	Arg	Glu	Pro	Val	Gly	Phe	HIS	Pro	Ala	vaı	ser
	7621				900					905		1	C1	17-1	910	ЛΊα	Sor
	7623	Gln	Leu		Ala	Gln	Gly	Asp	Thr			vai	GIU	925	ser	Ala	
	7624			915		_			920			17 - 1	17-1		Val	Nla	Thr
	7626	Pro		Leu	Leu	Gln	Ala	Met	Asp	Asp	Asp	vaı	940	1111	vaı	Ата	1111
	7627		930					935		m).	7	Mot		Thr	Nla	I Au	Δla
				Arg	Asp	Asp			Ата	Thr	Arg	Met 955	 Leu	7111	Ala	пеа	. 960
	7630	945			_		950		m)	17 - 1	7 ~~						
			Ala	Tyr	Val		GLY	Val	Thr	vaı	970	Trp	PIO	AIA	116	975	Ory
	7633	·			1	965	** 3	<b>.</b>	7	T 0.11			Tur	Δla	Phe		
		Thr	Thr	Thr			Val	ьeu	Asp	985	PIO	Thr	1 y 1.	ALG	990	0111	
	7636		_	_	980	_	<b>~1</b>	<b>0</b>	71.				Thr	Δla	-		Glv
			Arg		Trp	Leu	GIU	Ser	1000	PIO	10	Ala	1111	1005	1100	002	0-1
	7639			995	Ŧ	C1	The sec	C1	1000	Λla	I c V	Ala			Pro	Glv	Ara
					Leu	СТУ	Thr	101E	Val	Ala	Val	ΑIα	1020	001		0 1	5
	7642		1010	m1	C1	D	17-1	1015	רות	Glv	Δla				Val	Phe	Ile
				Thr	GTA	Pro	val	PIO	Ата	GIŅ	Ala	Asp <b>1035</b>	my	1120			104
>	7645	025	<b>6</b> 1	T	71-	Т о	1030	ת 1 ת	ЛΊэ	Aen	Δla			Cvs	Ala	Thr	Val
			Glu	Leu				Ala	AIG	nsp	1050	1 1111	1.05	010		1055	
	7648	<b>~</b> 1	<b>6</b> 1	-	7	1045	mh w	C~~	Val				Ser	Ala			Arg
			Gin				1111	261	vai	1065	, оту	Cly	00		1070	1	,
	7651		m !	<b>7</b> .7 -	1060	mh	П~~	V-1				Δla	Ala				Ara
			ınr			IIII	ттр	val	1080	O L U				1085	1	- 9	Arg
	7654	70 -	D1	1075	17-1	u:-	ጥኤ				, Acr	Ala				Leu	His
					vai	птѕ	TIII	1095	val	ОТУ	1101		1100		·		
	7657	л1 -	1090	. Cl.	. 17-1	Ι	Λ∽~			Δra	. Val				Glu	Ala	Val
	1009	мта	GIU	г ст.	val	ьeu	ALG	L T O	, сту	<i>r</i> 11 9	, , ,,,						

DATE: 11/20/2002 RAW SEQUENCE LISTING TIME: 11:24:11 PATENT APPLICATION: US/09/940,316

Input Set : D:\30062-20026.txt
Output Set: N:\CRF4\11192002\I940316.raw

E>	7660	105				1	110				1	.115					112
	7662			Ala	Trp	Pro	Pro	Pro	Gly	Ala	Val	Pro	Ala	Asp	Gly	Leu	Pro
	7663	-				1125			-		130					135	
	7665	Gly	Ala	Trp	Arg	Arg	Ala	Asp	Gln	Val	Phe	Val	Glu	Ala	Glu	Val	Asp
	7666									145					.150		
	7668	Ser	Pro	Asp	Gly	Phe	Val	Ala	His	Pro	Asp	Leu	Leu	Asp	Ala	Val	Phe
	7669		1	155				1	160			•	1	1165			
•	7671	Ser	Ala	Val	Gly	Asp	Gly	Ser	Arg	Gln	Pro	Thr	Gly	Trp	Arg	Asp	Leu
	7672		1170					L175					180				
	7674	Ala	Val	His	Ala	Ser	Asp	Ala	Thr	Val	Leu	Arg	Ala	Cys	Leu	Thr	Arg
E>							L190					195					120
	7677	Arg	Asp	Ser			Val	Glu	Leu				Asp	Gly			Met
	7678					1205					L210				1		
	7680		Val			Ala	Glu	Ser			Leu					Ser	Ala
,	7681		•		1220					L225					.230	_	_
	7683				Asp	Glu	Ser			Leu	Leu				Trp	Leu	Pro
	7684			1235			_		1240		_		. 1		01	<b>C</b> 1	m
	7686			Glu	Ala	His								Pro	GIU	стА	Tyr
	7687		1250	~ 7	m.	- 1		1255				_	1260	7 00	Dro	mh ∽	Λαρ
	7689			TTE	Thr					Asp			ASP	ASP	PIO	1111	128
E>	7690			7	m \		L270		mh	111.0		L275	Th.	Thr	7~~	Val	
	7692 7693	Pro	HIS	Asn		1285	Thr	Arg	Int				TIIL			295	Ti <del>c</del> (t
	7695	Th.	717	Lou			uic	Lou	Tla								Val
	7696		MIA		1300		1113			1305	1111	11011			310		
	7698		Thr								Ala	Val	Thr				Ara
	7699			1315					1320					1325			
	7701				Asn	Glu	His			Arg	Ile	His	Leu	Ile	Glu	Thr	His
	7702		1330					1335	-	_			L340				•
	7704	His	Pro	His	Thr	Pro	Leu	Pro	Leu	Thr	Gln	Leu	Thr	Thr	Leu	His	Gln
E>	7705	345				:	1350				1	1355					136
	7707	Pro	His	Leu	Arg	Leu	Thr	Asn	Asn	Thr	Leu	His	Thr	Pro	His	Leu	Thr
	7708					1365					1370					375	
,	7710	Pro	Ile	Thr	Thr	His	His	Asn			Thr	Thr	Thr			Thr	Pro
-	7711				1380					1385					1390	-1	m)
	7713	Pro			Pro	Asn	His	Ala	Ile	Leu	Ile	Thr			Ser	GIY	Thr
	7714			1395			_		L400	_	_			1405	m)	<b>.</b>	T
	7716			Gly	Ile	Leu				Leu	Asn			His	Thr	Tyr	Leu
	7717		1410	_		_		1415		m1	m1		1420	mh	mi.	Tla	Dwo
_	7719		Ser	Arg	Thr			Pro	Pro	Tnr				Inr	HIS	TTE	
E>	7720	425	7\	T	m 1		1430	mh	C1	T1~		Clp		Leu	Thr	Hie	144
	7722		Asp	ьeu		Asp 1445	Pro	inr	GIII		1nr 1450	GIII	wid	ьeu		455	116
	7723 7725		Cln	Dro			G1 11	Tlo	Pho			Δla	Δla	Thr			Asp
	7726		GIII		Leu 1460	1111	оту	116		1465	1111	1110	1110		L470		.105
	7728		Thr			Aen	T.e.u	Thr			His	Leu	Thr			Leu	Gln
	7729	111 CI		1475	1111	HOII	п¢п		1480	U 1.11				1485			
	7731	Pro			Asp.	Ala	Ala			Leu	His	His			Gln	Asn	Gln
	7732		1490					1495					1500				
		•															

Input Set : D:\30062-20026.txt

```
7734 Pro Leu Thr His Phe Val Leu Tyr Ser Ser Ala Ala Ala Thr Leu Gly
                                   1515
                          1510
E--> 7735 505
    7737 Ser Pro Gly Gln Ala Asn Tyr Ala Ala Ala Asn Ala Phe Leu Asp Ala
                                         1530
                       1525
    7740 Leu Ala Thr His Arg His Thr Gln Gly Gln Pro Ala Thr Thr Ile Ala
                                      1545
           1540
    7743 Trp Gly Met Trp His Thr Thr Thr Leu Thr Ser Gln Leu Thr Asp
    7744 1555 1560 1565
    7746 Ser Asp Arg Asp Arg Ile Arg Arg Gly Gly Phe Leu Pro Ile Ser Asp
    7747 1570 1575
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    8174 Met Arg Leu Tyr Glu Ala Ala Arg Arg Thr Gly Ser Pro Val Val Val
    8177 Ala Ala Ala Leu Asp Asp Ala Pro Asp Val Pro Leu Leu Arg Gly Leu
                                       25 "
                    20
    8180 Arg Arg Thr Thr Val Arg Arg Ala Ala Val Arg Glu Arg Ser Leu Ala
                                    40 .
                                                       45
    8183 Asp Arg Ser Pro Cys Cys Pro Thr Thr Ser Ala Pro Thr Pro Pro Ser
                                8186 Arg Ser Ser Trp Asn Ser Thr Ala Thr Val Leu Gly His Leu Gly Ala
                                              75
                            70
     8189 Glu Asp Ile Pro Ala Thr Thr Thr Phe Lys Glu Leu Gly Ile Asp Ser
                                          90
                         85
     8192 Leu Thr Ala Val Gln Leu Arg Asn Ala Leu Thr Thr Ala Thr Gly Val
     8193
                    100
                                       105
     8195 Arg Leu Asn Ala Thr Ala Val Phe Asp Phe Pro Thr Pro Arg Ala Leu
                                                      125
                                   120
     8198 Ala Ala Arg Leu Gly Asp Glu Leu Ala Gly Thr Arg Ala Pro Val Ala
                               135
          ·130
     8201 Ala Arg Thr Ala Ala Thr Ala Ala Ala His Asp Glu Pro Leu Ala Ile
                                              155
                           150
     8204 Val Gly Met Ala Cys Arg Leu Pro Gly Gly Val Ala Ser Pro Gln Glu
                                           170
                        165
     8207 Leu Trp Arg Leu Val Ala Ser Gly Thr Asp Ala Ile Thr Glu Phe Pro
                                       185
                    180
     8210 Ala Asp Arg Gly Trp Asp Val Asp Ala Leu Tyr Asp Pro Asp Pro Asp
                                                   . 205
                                   200
     8213 Ala Ile Gly Lys Thr Phe Val Arg His Gly Gly Phe Leu Asp Gly Ala
                                215
     8216 Thr Gly Phe Asp Ala Ala Phe Phe Gly Ile Ser Pro Arg Glu Ala Leu
```

Input Set : D:\30062-20026.txt

	8364	1	1010				1	.015				1	020				
	8366			717	17 - 1	Dho			Clu	Lou	Δla			Δĺa	Δla	Δέρ	Δla
E>			Arg	мта	vaı		.030	ліа	Giu	пец		.035	1110			r 10 p	104
E>	8369		7	Cua	חות			C1.,	Cln	Lou			Thr	Ser	V = 1	Dro	
		TIII	ASP	Cys				Giu			.050	V 63.1.	1111	501		.055	Cly
	8370	<b>61</b>	C	n1_		.045						Thr	Trn	Val			Dro
	8372	GIA	ser			СТУ	Arg	Ald			GIII	1111	пр		.070	Giu	110
	8373 8375	7.1.	<b>λ1</b> -		060	7	7 ~~	7. ~~~		.065	Un l	Uic	Thr			Glv	Asn
-		Ата			СТУ	Arg	Arg		1080	1111	vaı	HIS		.085	val	Gry	изр
	8376 8378	71-		L075	m 1	T	mi a			C1	Wal	T OIL			Glv	Δra	Val
				1rp	Inr	ьеu			GIU	GIY	vaı		1100	110	GIA	nry	٧۵١
	8379 8381		1090	Di	C1	70.7		1095	ሞኮ፦	701-	Trn			Pro	Clv	Δ 1·5··	·Val
			GIII	PIO	GIU				IIIL	нта		1115	FIO	110	Сту	лια	112
E>	<b>8382</b> 8384	102	7.1.	7	C1		L110		7.1.	T			ЛΊэ	Acn	Gln	U = 1	
		Pro	АТА	Asp			Pro	GIA	Ald		L130	ALG	Ата	тэр		135	LIIC
y. •	8385	**- 3	C1	7.1 -		125	7	C	Dwa			Dho	Ual	λ1. э			Δsn
	8387	vai	GIU			vai	ASP	ser			GIY	rne	vaı		1150	110	лор
	8388	<b>T</b>	T		L140	17-1	Dh.	C		145	C1.,	7 cn	Clu			Gln	Pro
4 '	8390	Leu			Ата	val	Pne			Val	Gry	ASP		1165	Arg	GIII	110
	8391	mı.		L155	7	7	T		1160	u. c	ת ז ה	Sor			Thr	V=1	T.e.11
	8393			Trp	Arg	Asp			vaı	нтѕ	Ala		1180	Ala	TIIL	Val	Lea
	8394 8396			<b>C</b>	7	m \		1175	7	C ~ ~	C1			Glu	Ι Δ13	בומ	Δla
	8396 8397		Ala	Cys	Leu		1190	Arg	Asp	Ser		1195				niia	120
E>	8397		7 00	C1	۸1 a			Dro	Wá l	Lou						Thr	
	8400	rne	Asp	Gry		L205	nec	FIO	vai		1210	1114	OIG	001		215	
	8402	Glv	Glu	(Le V			Δla	Glv	Glv			Glu	Ser	Asp			Leu
	8403	Gry	Giu		1220	561	niu	OLY	O1 y	1225	пор			112.	1230		-
	8405	Ara	T.en												Gly	Ala	Asp
	8406	**** 9		1235	110	200			1240					1245·			-
	8408	Glu			Glu	Glv	Tvr			Ile	Thr	Ala	Thr	His	Pro	Asp	Asp
	8409		1250		010	011		1255					1260				
	8411			Asp	Pro	Thr			His	Asn	Thr	Pro	Thr	Arg	Thr	His	Thr
E>	8412			L			1270	•				1275		_			128
	8414			Thr	Ara			Thr	Alà	Leu	Gln	His	His	Leu	Ile	Thr	Thr
	8415					1285					1290				1	1295	
	8417	Asn	His	Thr	Leu	Ile	Val	His	Thr	Thr	Thr	Asp	Pro	Pro	Gly	Ala	Ala
	8418				1300					1305				-	1310		
	8420	Val	Thr	Gly	Leu	Thr	Arg	Thr	Ala	Gln	Asn	Glu	His	Pro	Gly	Arg	Ile
	8421		٠.	1315					1320					1325		•	
	8423	His	Leu	Ile	Glu	Thr	His	His	Pro	His	Thr	Pro	Leu	·Pro	Leu	Thr	Gln
	8424		1330					1335					1340				
	8426	Leu	Thr	Thr	Leu	His	Gln	Pro	His	Leu	Arg	Leu	Thr	Asn	Asn	Thr	Leu
E>	8427	345				:	1350				:	1355					136
	8429	His	Thr	Pro	His	Leu	Thr	Pro	Ile	Thr	Thr	His	His	Asn	Thr	Thr	Thr
	8430					1365					1370				-	1375	
	8432	Thr	Thr	Pro	Asn	Thr	Pro	Pro	Leu	Asn	Pro	Asn	His			Leu	Ile
	8433				1380					1385					1390		
	8435	Thr	Gly	Gly	Ser	Gly	Thr	Leu	Ala	Gly	Ile	Leu	Ala	Arg	His	Leu	Asn
	8436			1395					1400					1405			

Input Set : D:\30062-20026.txt

```
8438 His Pro His Thr Tyr Leu Leu Ser Arg Thr Pro Pro Pro Pro Thr Thr
                                                1420
                             1415
    8441 Pro Gly Thr His Ile Pro Cys Asp Leu Thr Asp Pro Thr Gln Ile Thr
                                            1435
                          1430
E--> 8442 425
    8444 Gln Ala Leu Thr His Ile Pro Gln Pro Leu Thr Gly Ile Phe His Thr
                                         1450
                                               . 1455
                      1445
    8447 Ala Ala Thr Leu Asp Asp Ala Thr Leu Thr Asn Leu Thr Pro Gln His
                                                        1470
    8448 1460
                                     1465
    8450 Leu Thr Thr Thr Leu Gln Pro Lys Ala Asp Ala Ala Trp His Leu His
                                 1480
                                                    1485
         · · · 1475
    8453 His His Thr Gln Asn Gln Pro Leu Thr His Phe Val Leu Tyr Ser Ser
                                                 1500
                             1495
    8454 1490
    8456 Ala Ala Ala Thr Leu Gly Ser Pro Gly Gln Ala Asn Tyr Ala Ala Ala
                                            1515
                         1510
E--> 8457 505
    8459 Asn Ala Phe Leu Asp Ala Leu Ala Thr His Arg His Thr Gln Gly Gln
                      1525 1530
    8462 Pro Ala Thr Thr Ile Ala Trp Gly Met Trp His Thr Thr Thr Leu
                                     1545
    8463 1540
    8465 Thr Ser Gln Leu Thr Asp Ser Asp Arg Asp Arg Ile Arg Arg Gly Gly
                               1560 - - 1565
    8466 1555
     8468 Phe Leu Pro Ile Ser Asp Asp Glu Gly Met
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     8891 <210> SEQ ID NO: 33
    8892 <211> LENGTH: 1605
     8893 <212> TYPE: PRT
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     8897 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic PKS
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     8902 1
     8904 Ala Ala Ala Leu Asp Asp Ala Pro Asp Val Pro Leu Leu Arg Gly Leu
                                        25
                     20
     8907 Arg Arg Thr Thr Val Arg Arg Ala Ala Val Arg Glu Arg Ser Leu Ala
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                                    40
     8910 Asp Arg Ser Pro Cys Cys Pro Thr Thr Ser Ala Pro Thr Pro Pro Ser
                                55
     8913 Arg Ser Ser Trp Asn Ser Thr Ala Thr Val Leu Gly His Leu Gly Ala
                            70
     8916 Glu Asp Ile Pro Ala Thr Thr Phe Lys Glu Leu Gly Ile Asp Ser
                                            90
                        85
     8919 Leu Thr Ala Val Gln Leu Arg Asn Ala Leu Thr Thr Ala Thr Gly Val
                                       105
     8922 Arg Leu Asn Ala Thr Ala Val Phe Asp Phe Pro Thr Pro Arg Ala Leu
                                   120
                115
     8925 Ala Ala Arg Leu Gly Asp Glu Leu Ala Gly Thr Arg Ala Pro Val Ala
            130
                               135
                                                  140
     8928 Ala Arg Thr Ala Ala Thr Ala Ala Ala His Asp Glu Pro Leu Ala Ile
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Input Set : D:\30062-20026.txt

	9076		930					935					940				
	9078	Ser		Val	T.e.11	T.en	Gln		Met	Asp	Asp	Asp	Val	Val	Thr	Val	Ala
	9079			• • • •	Dea	200	950	1114				955					960
	9081		T.e.11	Ara	Ara	Asn		Glv	Asn	Ala	Thr		Met	Leu	Thr	Ala	
	9082	1111	ВСС	1119	1119	965	1150	O <sub>1</sub> y	1105	711u	970	5				975	
	9084	717	Cln	7112	ጥ‹‹~		шіс	Gl v	Val	Thr		Δsn	Trn	Pro	Ala		ī.en
	9085	Ala	GIII	мта	980	val	птэ	Gry	vai	985	Vai	пор	111	110	990	110	BCa .
	9087	C1	m b	mb		mb	71	W-1	T 011		· T O.)	Dro	Thr	ጥረድ		Phe	G.l n
		GIA	IIII		1111	IIII	ALG		1000	АЗР	nea	110		1005	nia	LIIC	OIII
	9088		01	995	m	m	7	-		71-	Dwa	Dwo	_		۸1 -	λερ	Sor
	9090			Arg	Tyr	Trp			Ser	Ата	Pro			TIIL	Ald	ASP	261
	9091		1010	_				1015	<b>6</b> 1	1	21.		1020	C1	C = =	Dwa	C1
	9093		His	Pro	Val			Thr	GLy	.vaı			Ala	GTÀ	ser	PIO	
E>						_	1030		_			1035		70	n 1 -	17-1	104
	9096	Arg	Val	Phe		-	Pro	Vaļ	Pro			Ala	Asp	Arg			Pne
	9097					1045					L050		m i	_		1055	mı.
•	9099	Ile	Ala			Ala	Leu	Ala			Asp	Ala	Thr	Asp	Cys	Ala	Thr
	9100				1060					1065					1070	_	
	9102	Val	Glu	Gln	Leu	Asp	Val			Val	Pro	Gly			Ala	Arg	GLy.
	9103			1075					1080					1085		. 1	
	9105	.Arg	Ala	Thr	Ala	Gln			Val	Asp	Glu			Ala	Asp	Gly	Arg
	9106		1090					1095					1100				
	9108	Arg	Arg	Phe	Thr	Val	His	Thr	Arg	Val			Ala	Pro	Tṛp	Thr	
E>							1110					115					112-
	9111	His	Ala	Glu	Gly	Val	Leu-	Arg	Pro:			Val	Pro	Gln			Ala
	9112				1	1125				-	1130				Ī	1135	
														_			_
	9114	Val	Asp		Ala		Pro	Pro	Pro	Gly	Ala	Val	Pro	Ala	Asp	Gly	Leu
	9115			1	Ala L140	Trp			-	Gly L145	Ala -				Asp 1150	Gly	•
	9115 9117		Gly	Ala	Ala L140	Trp		Ala	Asp	Gly L145	Ala -		Val	Glu	Asp 1150	Gly	Leu Val
	9115 9117 9118	Pro	Gly	1 Ala 1155	Ala 1140 Trp	Trp Arg	Arg	Ala	: Asp 1160	Gly L145 Gln	Ala - Val	Phe <sup>-</sup>	Val	: Glu 1165	Asp 1150 <sup>-</sup> Ala	Gly Glu	Val:
	9115 9117 9118 9120	Pro Asp	Gly Ser	1 Ala 1155	Ala 1140 Trp	Trp Arg	Arg Phe	Ala Val	: Asp 1160	Gly L145 Gln	Ala - Val	Phe Asp	Val Leu	: Glu 1165	Asp 1150 <sup>-</sup> Ala	Gly Glu	Val:
	9115 9117 9118 9120 9121	Pro Asp	Gly Ser 1170	Ala 1155 Pro	Ala 1140 Trp Asp	Trp Arg Gly	Arg Phe	Ala Val 1175	Asp 1160 Ala	Gly 1145 Gln His	Ala - Val Pro	Phe Asp	Val Leu 1180	Glu 1165 Leu	Asp 1150 Ala Asp	Gly Glu Ala	Val: Val
,	9115 9117 9118 9120 9121 9123	Pro Asp Phe	Gly Ser 1170	Ala 1155 Pro	Ala 1140 Trp Asp	Trp Arg Gly Gly	Arg Phe Asp	Ala Val 1175	Asp 1160 Ala	Gly 1145 Gln His	Ala - Val Pro Gln	Phe Asp Pro	Val Leu 1180	Glu 1165 Leu	Asp 1150 Ala Asp	Gly Glu Ala	Val Val Asp
E>	9115 9117 9118 9120 9121 9123 <b>9124</b>	Pro Asp Phe 185	Gly Ser 1170 Ser	Ala 1155 Pro Ala	Ala 1140 Trp Asp Val	Trp Arg Gly Gly	Arg Phe Asp	Ala Val 1175 Gly	Asp 1160 Ala Ser	Gly 1145 Gln His Arg	Ala - Val Pro Gln	Phe Asp Pro	Val Leu 1180 Thr	Glu 1165 Leu Gly	Asp 1150 Ala Asp Trp	Glu Glu Ala Arg	Vala Val Asp 120
E>	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126	Pro Asp Phe 185	Gly Ser 1170 Ser	Ala 1155 Pro Ala	Ala 1140 Trp Asp Val	Trp Arg Gly Gly Ala	Arg Phe Asp	Ala Val 1175 Gly	Asp 1160 Ala Ser	Gly 1145 Gln His Arg	Ala - Val Pro Gln Val	Phe Asp Pro	Val Leu 1180 Thr	Glu 1165 Leu Gly Ala	Asp 1150- Ala Asp Trp Cys	Gly Glu Ala Arg Leu	Vala Val Asp 120
E>	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127	Pro Asp Phe 185 Leu	Gly Ser 1170 Ser Ala	Ala 1155 Pro Ala Val	Ala 1140 Trp Asp Val	Arg Gly Gly Ala 1205	Arg Phe Asp 1190 Ser	Val Val 1175 Gly Asp	Asp 1160 Ala Ser	Gly 1145 Gln His Arg	Ala Val Pro Gln Val Val	Asp Pro l <b>195</b> Leu	Val Leu 1180 Thr	Glu 1165 Leu Gly	Asp 1150- Ala Asp Trp Cys	Gly Glu Ala Arg Leu	Val Val Asp 120 Thr
E>	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9129	Pro Asp Phe 185 Leu	Gly Ser 1170 Ser Ala	Ala 1155 Pro Ala Val	Ala 1140 Trp Asp Val His	Arg Gly Gly Ala 1205	Arg Phe Asp 1190 Ser	Val Val 1175 Gly Asp	Asp 1160 Ala Ser Ala	Gly 145 Gln His Arg Thr	Ala Val Pro Gln Val Val	Asp Pro l <b>195</b> Leu	Val Leu 1180 Thr	Glu 1165 Leu Gly Ala	Asp 1150 Ala Asp Trp Cys	Gly Glu Ala Arg Leu	Val Val Asp 120 Thr
E>	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9129 9130	Pro Asp Phe 185 Leu Arg	Ser 1170 Ser Ala	Ala 1155 Pro Ala Val	Ala 1140 Trp Asp Val His Ser 1220	Arg Gly Gly Ala 1205 Gly	Arg Phe Asp 1190 Ser Val	Val Val 1175 Gly Asp	Asp 1160 Ala Ser Ala Glu	Gly 145 Gln His Arg Thr Leu 1225	Ala Val Pro Gln Val 1210 Ala	Phe Asp Pro l <b>195</b> Leu	Leu 1180 Thr Arg	Glu 1165 Leu Gly Ala	Asp 1150 Ala Asp Trp Cys Gly 1230	Gly Glu Ala Arg Leu 1215 Ala	Val Val Asp 120 Thr
E>	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9129 9130 9132	Pro Asp Phe 185 Leu Arg	Ser 1170 Ser Ala Arg	Ala 1155 Pro Ala Val Asp Val	Ala 1140 Trp Asp Val His Ser 1220	Arg Gly Gly Ala 1205 Gly	Arg Phe Asp 1190 Ser Val	Val 1175 Gly Asp Val	Asp 1160 Ala Ser Ala Glu Ser	Gly 145 Gln His Arg Thr Leu 1225	Ala Val Pro Gln Val 1210 Ala	Phe Asp Pro l195 Leu Ala	Val Leu 1180 Thr Arg Phe	Glu 1165 Leu Gly Ala Asp	Asp 1150 Ala Asp Trp Cys Gly 1230	Gly Glu Ala Arg Leu 1215 Ala	Val Val Asp 120 Thr
E>	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9129 9130 9132 9133	Pro Asp Phe 185 Leu Arg	Ser 1170 Ser Ala Arg	Ala 1155 Pro Ala Val Asp Val 1235	Ala 1140 Trp Asp Val His Ser 1220 Leu	Arg Gly Gly Ala 1205 Gly Thr	Arg Phe Asp 1190 Ser Val Ala	Val 1175 Gly Asp Val	Asp 1160 Ala Ser Ala Glu Ser 1240	Gly 1145 Gln His Arg Thr Leu 1225 Val	Ala Val Pro Gln Val 1210 Ala Thr	Phe Asp Pro l195 Leu Ala Leu	Val Leu 1180 Thr Arg Phe	Glu 1165 Leu Gly Ala Asp Glu 1245	Asp Ala Asp Trp Cys Gly 1230 Val	Gly Glu Ala Arg Leu 1215 Ala	Vala Val Asp 120 Thr Gly Ser
E>	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9129 9130 9132	Pro Asp Phe 185 Leu Arg	Ser 1170 Ser Ala Arg	Ala 1155 Pro Ala Val Asp Val 1235	Ala 1140 Trp Asp Val His Ser 1220 Leu	Arg Gly Gly Ala 1205 Gly Thr	Arg Phe Asp 1190 Ser Val Ala Glu	Val 1175 Gly Asp Val Glu Ser	Asp 1160 Ala Ser Ala Glu Ser 1240	Gly 1145 Gln His Arg Thr Leu 1225 Val	Ala Val Pro Gln Val 1210 Ala Thr	Phe Asp Pro l195 Leu Ala Leu	Val Leu 1180 Thr Arg Phe Gly	Glu 1165 Leu Gly Ala Asp Glu 1245	Asp Ala Asp Trp Cys Gly 1230 Val	Gly Glu Ala Arg Leu 1215 Ala	Vala Val Asp 120 Thr Gly Ser
E>	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9130 9132 9133 9135 9136	Pro Asp Phe 185 Leu Arg Met Ala	Ser 1170 Ser Ala Arg Pro Gly 1250	Ala 1155 Pro Ala Val Asp Val 1235 Gly	Ala 1140 Trp Asp Val His Ser 1220 Leu	Trp Arg Gly Gly Ala 1205 Gly Thr	Arg Phe Asp 1190 Ser Val Ala Glu	Val 1175 Gly Asp Val Glu Ser 1255	Asp 1160 Ala Ser Ala Glu Ser 1240 Asp	Gly 1145 Gln His Arg Thr Leu 1225 Val	Ala Val Pro Gln Val 1210 Ala Thr	Phe Asp Pro l195 Leu Ala Leu	Val Leu 1180 Thr Arg Phe Gly Arg 1260	Glu 1165 Leu Gly Ala Asp Glu 1245 Leu	Asp 1150- Ala Asp Trp Cys Gly 1230 Val	Gly Glu Ala Arg Leu 215 Ala Ala Trp	Value Value Value Asp 120 Thr Gly Ser Leu
	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9130 9132 9133 9135 9136 9138	Pro Asp Phe 185 Leu Arg Met Ala Pro	Ser 1170 Ser Ala Arg Pro Gly 1250 Val	Ala 1155 Pro Ala Val Asp Val 1235 Gly	Ala 1140 Trp Asp Val His Ser 1220 Leu	Trp Arg Gly Gly Ala 1205 Gly Thr	Arg Phe Asp 1190 Ser Val Ala Glu	Val 1175 Gly Asp Val Glu Ser 1255	Asp 1160 Ala Ser Ala Glu Ser 1240 Asp	Gly 1145 Gln His Arg Thr Leu 1225 Val	Ala Val Pro Gln Val 1210 Ala Thr Leu Ala	Phe Asp Pro l195 Leu Ala Leu Leu	Val Leu 1180 Thr Arg Phe Gly Arg 1260	Glu 1165 Leu Gly Ala Asp Glu 1245 Leu	Asp 1150- Ala Asp Trp Cys Gly 1230 Val	Gly Glu Ala Arg Leu 215 Ala Ala Trp	Value Value Asp 120 Thr Gly Ser Leu Gly
	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9137 9130 9132 9133 9135 9138 <b>9138</b>	Pro Asp Phe 185 Leu Arg Met Ala Pro 265	Ser 1170 Ser Ala Arg Pro Gly 1250 Val	Ala 1155 Pro Ala Val Asp Val 1235 Gly Ala	Ala 1140 Trp Asp Val His Ser 1220 Leu Ser Glu	Arg Gly Gly Ala 1205 Gly Thr Asp	Arg Phe Asp 1190 Ser Val Ala Glu His	Val 1175 Gly Asp Val Glu Ser 1255 Tyr	Asp 1160 Ala Ser Ala Glu Ser 1240 Asp	Gly 145 Gln His Arg Thr Leu 1225 Val Gly	Ala Val Pro Gln Val 1210 Ala Thr Leu Ala	Phe Asp Pro l195 Leu Ala Leu Leu Asp	Val Leu 1180 Thr Arg Phe Gly Arg 1260 Glu	Glu 1165 Leu Gly Ala Asp Glu 1245 Leu	Asp 1150- Ala Asp Trp Cys Gly 1230 Val Glu Pro	Glu Ala Arg Leu 215 Ala Ala Trp Glu	Value Value Value Asp 120 Thr Gly Ser Leu Gly 128
	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9130 9132 9133 9135 9138 <b>9139</b> 9141	Pro Asp Phe 185 Leu Arg Met Ala Pro 265	Ser 1170 Ser Ala Arg Pro Gly 1250 Val	Ala 1155 Pro Ala Val Asp Val 1235 Gly Ala	Ala 1140 Trp Asp Val His Ser 1220 Leu Ser Glu Ile	Trp Arg Gly Gly Ala 1205 Gly Thr Asp Ala	Arg Phe Asp 1190 Ser Val Ala Glu His	Val 1175 Gly Asp Val Glu Ser 1255 Tyr	Asp 1160 Ala Ser Ala Glu Ser 1240 Asp	Gly 145 Gln His Arg Thr Leu 1225 Val Gly Gly	Ala Val Pro Gln Val 1210 Ala Thr Leu Ala Asp	Phe Asp Pro l195 Leu Ala Leu Leu Asp	Val Leu 1180 Thr Arg Phe Gly Arg 1260 Glu	Glu 1165 Leu Gly Ala Asp Glu 1245 Leu	Asp 1150- Ala Asp Trp Cys Gly 1230 Val Glu Pro	Gly Glu Ala Arg Leu 215 Ala Ala Trp Glu Pro	Value Value Value Asp 120 Thr Gly Ser Leu Gly 128
	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9130 9132 9133 9135 9138 <b>9138</b> <b>9141</b> 9142	Pro Asp Phe 185 Leu Arg Met Ala Pro 265 Tyr	Ser 1170 Ser Ala Arg Pro Gly 1250 Val	Ala 1155 Pro Ala Val Asp Val 1235 Gly Ala Leu	Ala 1140 Trp Asp Val His Ser 1220 Leu Ser Glu Ile	Trp Arg Gly Gly Ala 1205 Gly Thr Asp Ala Thr 1285	Arg Phe Asp 1190 Ser Val Ala Glu His 1270 Ala	Val 1175 Gly Asp Val Glu Ser 1255 Tyr	Asp 1160 Ala Ser Ala Glu Ser 1240 Asp Asp	Gly 145 Gln His Arg Thr Leu 1225 Val Gly Pro	Ala Val Pro Gln Val 1210 Ala Thr Leu Ala Asp	Phe Asp Pro 195 Leu Ala Leu Leu Asp 1275 Asp	Val Leu 1180 Thr Arg Phe Gly Arg 1260 Glu	Glu 1165 Leu Gly Ala Asp Glu 1245 Leu Leu	Asp 1150- Ala Asp Trp Cys Gly 1230 Val Glu Pro	Gly Glu Ala Arg Leu 215 Ala Ala Trp Glu Pro 1295	Valar Val Asp 120 Thr Gly Ser Leu Gly 128 Thr
	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9130 9132 9133 9135 9138 <b>9139</b> 9141	Pro Asp Phe 185 Leu Arg Met Ala Pro 265 Tyr	Ser 1170 Ser Ala Arg Pro Gly 1250 Val	Ala 1155 Pro Ala Val Asp Val 1235 Gly Ala Leu His	Ala l140 Trp Asp Val His Ser l220 Leu Ser Glu Ile Asn	Trp Arg Gly Gly Ala 1205 Gly Thr Asp Ala Thr 1285	Arg Phe Asp 1190 Ser Val Ala Glu His 1270 Ala	Val 1175 Gly Asp Val Glu Ser 1255 Tyr	Asp 1160 Ala Ser Ala Glu Ser 1240 Asp Asp	Gly 145 Gln His Arg Thr Leu 1225 Val Gly Gly Pro	Ala Val Pro Gln Val 1210 Ala Thr Leu Ala Asp	Phe Asp Pro 195 Leu Ala Leu Leu Asp 1275 Asp	Val Leu 1180 Thr Arg Phe Gly Arg 1260 Glu	Glu 1165 Leu Gly Ala Asp Glu 1245 Leu Leu Asp	Asp 1150- Ala Asp Trp Cys Gly 1230 Val Glu Pro Asp Thr	Gly Glu Ala Arg Leu 215 Ala Ala Trp Glu Pro 1295	Valar Val Asp 120 Thr Gly Ser Leu Gly 128 Thr
	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9130 9132 9133 9135 9138 <b>9139</b> 9141 9142 9144	Pro Asp Phe 185 Leu Arg Met Ala Pro 265 Tyr Asn	Ser 1170 Ser Ala Arg Pro Gly 1250 Val Thr	Ala 1155 Pro Ala Val Asp Val 1235 Gly Ala Leu His	Ala 1140 Trp Asp Val His Ser 1220 Leu Ser Glu Ile Asn 1300	Trp Arg Gly Gly Ala 1205 Gly Thr Asp Ala Thr 1285 Thr	Arg Phe Asp 1190 Ser Val Ala Glu His 1270 Ala Pro	Vallors Serlors Thr	Asp 1160 Ala Ser Ala Glu Ser 1240 Asp Asp His	Gly 145 Gln His Arg Thr Leu 1225 Val Gly Pro Thr 1305	Val Val Val 1210 Ala Thr Leu Ala Asp 1290 His	Phe Asp Pro Leu Ala Leu Asp L275 Asp Thr	Val Leu 1180 Thr Arg Phe Gly Arg 1260 Glu Pro Gln	Glu 1165 Leu Gly Ala Asp Glu 1245 Leu Leu Asp	Asp 1150- Ala Asp Trp Cys Gly 1230 Val Glu Pro Asp Thr	Gly Glu Ala Arg Leu 215 Ala Ala Trp Glu Pro 1295 Arg	Valabase Val
	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9130 9132 9133 9135 9136 9138 <b>9139</b> 9141 9142 9144	Pro Asp Phe 185 Leu Arg Met Ala Pro 265 Tyr Asn	Ser 1170 Ser Ala Arg Pro Gly 1250 Val Thr	Ala 1155 Pro Ala Val Asp Val 1235 Gly Ala Leu His	Ala 1140 Trp Asp Val His Ser 1220 Leu Ser Glu Ile Asn 1300	Trp Arg Gly Gly Ala 1205 Gly Thr Asp Ala Thr 1285 Thr	Arg Phe Asp 1190 Ser Val Ala Glu His 1270 Ala Pro	Ala Val 1175 Gly Asp Val Glu Ser 1255 Tyr Thr Thr	Asp 1160 Ala Ser Ala Glu Ser 1240 Asp His Arg	Gly 145 Gln His Arg Thr Leu 1225 Val Gly Pro Thr 1305	Val Val Val 1210 Ala Thr Leu Ala Asp 1290 His	Phe Asp Pro Leu Ala Leu Asp L275 Asp Thr	Val Leu 1180 Thr Arg Phe Gly Arg 1260 Glu Pro Gln Asn	Glu 1165 Leu Gly Ala Asp Glu 1245 Leu Leu Asp Thr	Asp 1150- Ala Asp Trp Cys Gly 1230 Val Glu Pro Asp Thr	Gly Glu Ala Arg Leu 215 Ala Ala Trp Glu Pro 1295 Arg	Valabase Val
	9115 9117 9118 9120 9121 9123 <b>9124</b> 9126 9127 9130 9132 9133 9135 9138 <b>9139</b> 9141 9142 9144	Pro Asp Phe 185 Leu Arg Met Ala Pro 265 Tyr Asn	Ser 1170 Ser Ala Arg Pro Gly 1250 Val Thr	Ala 1155 Pro Ala Val Asp Val 1235 Gly Ala Leu His	Ala 1140 Trp Asp Val His Ser 1220 Leu Ser Glu Ile Asn 1300	Trp Arg Gly Gly Ala 1205 Gly Thr Asp Ala Thr 1285 Thr	Arg Phe Asp 1190 Ser Val Ala Glu His 1270 Ala Pro	Ala Val 1175 Gly Asp Val Glu Ser 1255 Tyr Thr Thr	Asp 1160 Ala Ser Ala Glu Ser 1240 Asp Asp His	Gly 145 Gln His Arg Thr Leu 1225 Val Gly Pro Thr 1305	Val Val Val 1210 Ala Thr Leu Ala Asp 1290 His	Phe Asp Pro Leu Ala Leu Asp L275 Asp Thr	Val Leu 1180 Thr Arg Phe Gly Arg 1260 Glu Pro Gln Asn	Glu 1165 Leu Gly Ala Asp Glu 1245 Leu Leu Asp	Asp 1150- Ala Asp Trp Cys Gly 1230 Val Glu Pro Asp Thr	Gly Glu Ala Arg Leu 215 Ala Ala Trp Glu Pro 1295 Arg	Valabase Val

Input Set : D:\30062-20026.txt

	9150			Thr	Thr	Thr							Val	Thr	Gly	Leu	Thr
	9151		1330					1335					1340				
•	9153	Arg	Thr	Ala	Gln	Asn	Glu	His	Pro	Gly	_		His	Leu	Ile	Glu	
E>	9154						1350					L355					136
	9156	His	His	Pro	His	Thr	Pro	Leu	Pro	Leu	Thr	Gln	Leu	Thr	Thr	Leu	His
	9157					1365				_	1370					375	
	9159	Gln	Pro	His	Leu	Arg	Leu	Thr	Asn	Asn	Thr	Leu	His	Thr	Pro	His	Leu
	9160													-	1390		
	9162	Thr	Pro	Ile	Thr	Thr	His	His	Asn	Thr	Thr	Thr	Thr	Thr	Pro	Asn	Thr
	9163			1395					L400					1405			
	9165	Pro	Pro	Leu	Asn	Pro	Asn	His	Ala	Ile	Leu	Ile	Thr	Gly	Gly	Ser	Gly
	9166		1410					1415					1420				
	9168	Thr	Leu	Ala	Gly	Ile	Leu	Ala	Arg	His	Leu	Asn	His	Pro	His	Thr	
E>	9169						430					L435					144
	9171	Leu	Leu	Ser	Arg	Thr	Pro	Pro	Pro	Pro	Thr	Thr	Pro	Gly	Thr	His	Ile
•	9172					L445					1450					455	
	9174	Pro	Cys	Asp	Leu	Thr	Asp	Pro	Thr	Gln	Ile	Thr	Gln	Ala	Leu	Thr	His
	9175				L460					1465					1470		
	9177	·Ile	Pro	Gln	Pro	Leu	Thr	Gly	Ile	Phe	His	Thr	Ala	Ala	Thr	Leu	Asp
	9178		1	L475				•• 1	L480			-	0	1485			
	9180							Leu	Thr	Pro	Gln			Thr	Thr	Thr	Leu
	9181		1490					1495					1500				
	9183	Gln	Pro	Lys	Ala	Asp	Ala	Ala	Trp	His			His	His	Thr	Gln	Asn
E>	9184											1515					152
	9186	Gln	Pro	Leu	Thr	His	Phe	Val	Leu				Ala	Ala			Leu
	9187					1525					1530					1535	
	9189	Gly	Ser													Leu	Asp
	9190				1540										1550		
	9192	Ala	Leu	Ala						Gln	Gly	Gln			Thr	Thr	Ile
	9193			1555				1						1565			
	9195								Thr	Thr	Thr			Ser	Gln	Leu	Thr
	9196		1570					1575					1580	_	_		_
*	9198		Ser	Asp	Arg	Asp	Arg	Ile	Arg	Arg				Leu	Pro	Ile	Ser
E>	9199						L590					1595					160
	9201		Asp	Glu	-												
	9202				3	L605											

VERIFICATION SUMMARY

DATE: 11/20/2002

TIME: 11:24:13 PATENT APPLICATION: US/09/940,316

Input Set : D:\30062-20026.txt

Output Set: N:\CRF4\11192002\I940316.raw

L:16 M:271 C: Current Filing Date differs, Replaced Current Filing Date L:2519 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:1 L:3448 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:17 M:332 Repeated in SeqNo=17 L:4135 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:19 M:332 Repeated in SeqNo=19 L:4818 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:21 M:332 Repeated in SeqNo=21 L:5503 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:23 M:332 Repeated in SeqNo=23 L:6210 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:25 M:332 Repeated in SeqNo=25 L:6925 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:27 M:332 Repeated in SeqNo=27 L:7645 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:29 M:332 Repeated in SeqNo=29 L:8367 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:31 M:332 Repeated in SeqNo=31 L:9094 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:33 M:332 Repeated in SeqNo=33